

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M04405	Client:	Alaskan Copper Works
Date Received:	03/17/11	Project:	M04405, F&BI 103224
Date Extracted:	03/18/11	Lab ID:	103224-01 x10
Date Analyzed:	03/21/11	Data File:	103224-01 x10.045
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	84	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	403
Nickel	371
Copper	325
Zinc	12.8

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Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Alaskan Copper Works
Date Received:	Not Applicable	Project:	M04405, F&BI 103224
Date Extracted:	03/17/11	Lab ID:	I1-187 mb
Date Analyzed:	03/21/11	Data File:	I1-187 mb.027
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	91	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Nickel	<1
Copper	<1
Zinc	<1

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Date of Report: 03/23/11

Date Received: 03/17/11

Project: Metro Self Monitor M04405, F&BI 103224

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 103158-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	20	<1	91	95	67-132	4
Nickel	ug/L (ppb)	20	4.20	87 b	84 b	73-119	4 b
Copper	ug/L (ppb)	20	<1	85	86	50-144	1
Zinc	ug/L (ppb)	50	7.81	86	89	46-148	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	115	66-135
Nickel	ug/L (ppb)	20	106	67-134
Copper	ug/L (ppb)	20	113	66-134
Zinc	ug/L (ppb)	50	111	57-135

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Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

103224

SAMPLE CHAIN OF CUSTODY

ME 03/17/11

ATy

Send Report To Garrod ThompsonCompany ALASKAN COPPER WORKSAddress 628 S. Harbor StCity, State, ZIP SEATTLE WA 98134Phone # 206-571-6033 Fax # 206-382-4309

SAMPLES (signature)

PROJECT NAME/NO.

METRO SELF MONITOR

PO #

M04405

TURNAROUND TIME

☐ Standard (2 Weeks)☒ RUSH 4 day

Rush charges authorized by:

REMARKS

DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED										Notes
						TPH-Diesel	TPH-Gasoline	BTX by 8021B	VOCs by 8021B	SVOCs by 821B	HPS					
M04405	01	3/17/11	12:30	H2O	1											

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FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<u>Garrod Thompson</u>	Garrod Thompson	ACW	3/17/11	2:07 PM
<u>M. Phan</u>	Nhan Phan	Te B T	3/18/11	2:07
Received by:				
Relinquished by:				
Received by:				
Samples collected at <u>17</u> °C				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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March 23, 2011

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on March 17, 2011 from the Metro Self Monitor M04405, F&BI 103224 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
ACU0323R.DOC